PREFACE FOR THE ENGLISH EDITION

THIS work was originally published in the Journal of the Russian Metallurgical Society, in 1911.

During the past six years, a large number of furnaces have been designed and placed in operation by my pupils, by the technical bureau .working under my direction, and by myself; but I do not know of a single instance in which we have met with a failure.

The hydraulic theory of the flow of hot gases has proved to be correct. This method of establishing the design of furnaces by computations has given good results and may be followed without fear.

This is not all; the new idea, that of examining each furnace as a hydraulic recipient or reservoir, has exercised a deep influence upon the working out of new forms of furnaces. During the last six years I have worked out a number of new forms of furnaces, the greater proportion of which have already been controlled by working experience. There is no doubt that we are on the eve of a radical change in the technical utilization of the heat generated by the combustion of fuel.

When the war is over, I hope to publish my work in regard to the establishment of the design of new types of furnaces. In the mean time, I limit myself to the following remarks:

During the last few years, it has happened more than once that a furnace construction thought out by me, solving a problem placed before me by a client, has proved, after some research, to have been described in an American patent. This tends to show that the technique of the United States has approached very close to the solution of many of the problems connected with the design of furnaces. With a little more theory, the American engineers will fully master the science of building furnaces. I am, therefore, extremely obliged to Mr. A. D. Williams for his offer to translate

this work. I am convinced that it will prove very useful to our esteemed allies, the Americans.

W.-E. GEOTJME-GEIMAILO.

PETHOGRAD, May, 1917.